

CLAIMS

What is claimed is:

1. An apparatus for use in a data processing device comprising:
a cursor control device to perform one or more defined cursor control functions;
an audio system embedded within the cursor control device, the audio system to generate audio responsive to audio signals received and/or generated by the data processing device; and
a light source embedded within the cursor control device, the light source to generate light responsive to control signals generated by the data processing device.
2. The apparatus as in claim 1 wherein the cursor control device comprises a directional pad configured to direct a cursor in specified directions responsive to a user input.
3. The apparatus as in claim 2 wherein the directional pad comprises:
a button shell having an exterior surface and an interior surface;
an actuator platform coupled to the button shell, the actuator platform pivoting around a pivot point; and
one or more switches interfacing with one or more points on the actuator platform, the switches communicatively coupled to generate control signals responsive to physical user input on the button shell.

4. The apparatus as in claim 1 wherein the audio system further comprises:

an audio receiver fixedly attached to an inside surface of the cursor control device, the audio receiver having a speaker for generating the audio responsive to the audio signals; and

a first air chamber adjacent to the audio receiver, the first air chamber positioned behind the speaker within the audio receiver.

5. The apparatus as in claim 4 further comprising:

a second air chamber adjacent to the audio chamber, the second air chamber positioned in front of the speaker within the audio receiver.

6. The apparatus as in claim 5 wherein the cursor control device includes one or more audio transmission holes directly adjacent to the second air chamber through which audio signals generated by the speaker within the audio receiver are transmitted.

7. The apparatus as in claim 4 further comprising:

one or more port holes coupling the first air chamber to the audio receiver.

8. The apparatus as in claim 7 further comprising:

a printed circuit board ("PCB") having a plurality of holes aligned with the port holes, wherein the port holes are sealed to the corresponding holes in the PCB by corresponding elastomer cones.

9. The apparatus as in claim 8 wherein the cursor control device is affixed to the PCB by the elastomer cones, wherein the elastomer cones deform

and apply a counter force responsive to a force applied to the cursor control device.

10. The apparatus as in claim 7 further comprising one or more exit holes coupling the first air chamber to an inner volume within the data processing device.

11. The apparatus as in claim 1 wherein the light source comprises a light emitting diode ("LED").

12. The apparatus as in claim 11 wherein the cursor control device comprises an external surface exposed to and end user and an internal surface, the LED configured to shine light between the external surface and the internal surface to illuminate the cursor control device.

13. The apparatus as in claim 3 wherein the directional pad further comprises:

a boot fixedly coupled to the interior surface of the button shell; and
an audio receiver of the audio system fixedly inserted into the boot, the audio receiver to generate audio responsive to audio signals generated and/or received by the data processing device.

14. The apparatus as in claim 3 wherein the pivot point comprises a gimble socket.

15. An apparatus to be used in a data processing device comprising:

cursor control means for performing one or more defined cursor control

functions;

audio system means embedded within the cursor control means, the audio system means to generate audio responsive to audio signals received and/or generated by the data processing device; and

lighting means embedded within the cursor control means, the light source to generate light responsive to control signals generated by the data processing device.

16. The apparatus as in claim 15 wherein the cursor control device comprises a directional pad configured to direct a cursor in specified directions responsive to a user input.

17. The apparatus as in claim 16 wherein the directional pad comprises:
a button shell having an exterior surface and an interior surface;
an actuator platform coupled to the button shell, the actuator platform pivoting around a pivot point; and
one or more switches interfacing with one or more points on the actuator platform, the switches communicatively coupled to generate control signals responsive to physical user input on the button shell.

18. The apparatus as in claim 17 wherein the directional pad further comprises:
a boot fixedly coupled to the interior surface of the button shell; and
an audio receiver of the audio system means fixedly inserted into the boot.

19. The apparatus as in claim 15 wherein the audio system further comprises:

an audio receiver fixedly attached to an inside surface of the cursor control device, the audio receiver having a speaker for generating the audio responsive to the audio signals; and

a first air chamber adjacent to the audio receiver, the first air chamber positioned behind the speaker within the audio receiver.

20. The apparatus as in claim 19 further comprising:

a second air chamber adjacent to the audio chamber, the second air chamber positioned in front of the speaker within the audio receiver.

21. The apparatus as in claim 20 wherein the cursor control device includes one or more audio transmission holes directly adjacent to the second air chamber through which audio signals generated by the speaker within the audio receiver are transmitted.

22. The apparatus as in claim 19 further comprising:

one or more port holes coupling the first air chamber to the audio receiver.

23. The apparatus as in claim 22 further comprising:

a printed circuit board ("PCB") having a plurality of holes aligned with the port holes, wherein the port holes are sealed to the corresponding holes in the PCB by corresponding elastomer cones.

24. The apparatus as in claim 23 wherein the cursor control device is affixed to the PCB by the elastomer cones, wherein the elastomer cones deform

and apply a counter force responsive to a force applied to the cursor control device.

25. The apparatus as in claim 22 further comprising one or more exit holes coupling the first air chamber to an inner volume within the data processing device.

26. The apparatus as in claim 15 wherein the light source comprises a light emitting diode ("LED").

27. The apparatus as in claim 26 wherein the cursor control device comprises an external surface exposed to and end user and an internal surface, the LED configured to shine light between the external surface and the internal surface to illuminate the cursor control device.

28. A method comprising:

- providing a cursor control device to perform one or more defined cursor control functions;
- embedding an audio system within the cursor control device, the audio system to generate audio responsive to audio signals received and/or generated by the data processing device; and
- embedding a light source within the cursor control device, the light source to generate light responsive to control signals generated by the data processing device.